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CATALOG 1924

ISSUED BY

Success Heater Manufacturing Co.

Manufacturers of

STEEL WARM AIR HEATING SYSTEMS

DES MOINES, IOWA

Aeroplane View of General Factory



Health Heat

FOREWORD

We venture the assertion that Warm Air Heating Systems throughout the world afford more comfort and pleasure than any other one thing. Realizing this to be true, we, as manufacturers of Warm Air Heating Systems, have given serious and constant study to the manufacture of Warm Air Heaters which would be as nearly perfect as it is possible to produce. Our continuous investigation, rigid tests and scientific improvements from year to year, have made it possible for us to develop a series of heaters which may be used whenever and wherever Warm Air Heating Systems are at all feasible. Our heaters are made to stand squarely on their own merits—your silent, capable and willing servants. Behind that product, there stands our Company, pledged to square and honest dealing intent alone upon three positive results:

A PERFECT HEATER.

A SUCCESSFUL DEALER.

A SATISFIED USER.

Through the attainment of those three ideals and the persistent determination to retain them, our own success is assured. To be positive that our dealers will be successful and that the users of our heaters will be entirely satisfied, we maintain an Engineering Department capable of solving all of your heating problems. We invite all of our dealers and users to submit to us for expert consideration and analysis, any technical points which may develop in the installation or the everyday operation of our heating systems. Service, fairness and co-operation, will always be uppermost in our business relations with our dealers and the users of our product. We earnestly solicit your business and can assure you that you will never have any cause for regret.

SUCCESS HEATER MANUFACTURING COMPANY

Steel Warm Air Heating Systems

1015-1099 Murphy St.

Des Moines, Iowa

EXTRA VAGANT PROMISES NEVER

Health Heat

HUMIDIFIED WARM AIR

The human body is a wonderfully intricate mechanism. It must have proper food to replace worn out tissues and to build bones and muscles. It must have oxygen taken regularly into the blood through its respiratory organs to cleanse and purify it.

Respiration should fill the lungs with air charged with oxygen to be assimilated by the blood for its own purification and the up-building and re-building of the tissues of the body. But that air should contain a certain degree of moisture, if its full benefit is to be positive.

Under normal conditions, the glands of the throat discharge a secretion which attacks and destroys the germs which endeavor to pass the orifice. When, however, the air breathed is devoid of the proper humidity to keep the throat tissue moist, those glands supply that moisture—but without the properties to destroy germs inhaled.

That being true the question of proper heating ends in this positive assertion:

Warm Air Containing the Proper Moisture Is Essential to Health

A properly designed and constructed steel warm air heater is, we believe, the only heating system which supplies pure humidified warm air to the living rooms.

Success Heaters do just that—positively and unfailingly.

PHENOMENAL SERVICE ALWAYS

Health Heat SERVICE HEATER

THE BODY:

Constructed of the highest grade, rust resisting, durable steel obtainable, riveted and caulked so carefully that any leakage of gas, smoke, or soot into the Warm Air Chamber, is impossible. The ductibility of the steel used throughout our entire line of heaters, as well as the many other special features, insures maximum efficiency.

THE RADIATOR:

Made with the same care and of the same high-class materials as the furnace body. It is fitted with a damper and division plate, so that direct or indirect draft may be used.

THE FRONT:

Cast of high-grade pig iron from accurate patterns and each part carefully machined and fitted to insure absolute control of the fire through its draft and air blast doors and tuyere disc.

THE GRATES:

Extra heavy cast iron of proper ratio to the prime heating surface of the heater. They are of the locomotive rocker type, self cleaning, efficient and durable.

THE HUMIDIFIER:

Removable for cleaning, conveniently located at top of the front and enclosed behind a closely fitted door. It has ample capacity to maintain at all times the proper humidity. Whenever the depth of the basement prevents the installation of our standard height heater, we supply two water pans with our low series.

OTHER DISTINCTIVE FEATURES:

The specially designed cupola brick fire pot, the tuyere, the overlap door cap and the cup-joint radiator connection collar, are described in detail on pages 16, 17 and 18.

CIRCULATION:

The smooth vertical lines of the body and radiator permit unobstructed and rapid flow of pure humidified warm air through the warm air chamber to the living rooms.

THE RESULT:

A heating system that is easy to operate, durable, efficient and economical.

EXTRAVAGANT PROMISES NEVER

Health Heat



STANDARD SERVICE HEATER

PHENOMENAL SERVICE ALWAYS

Health Heat

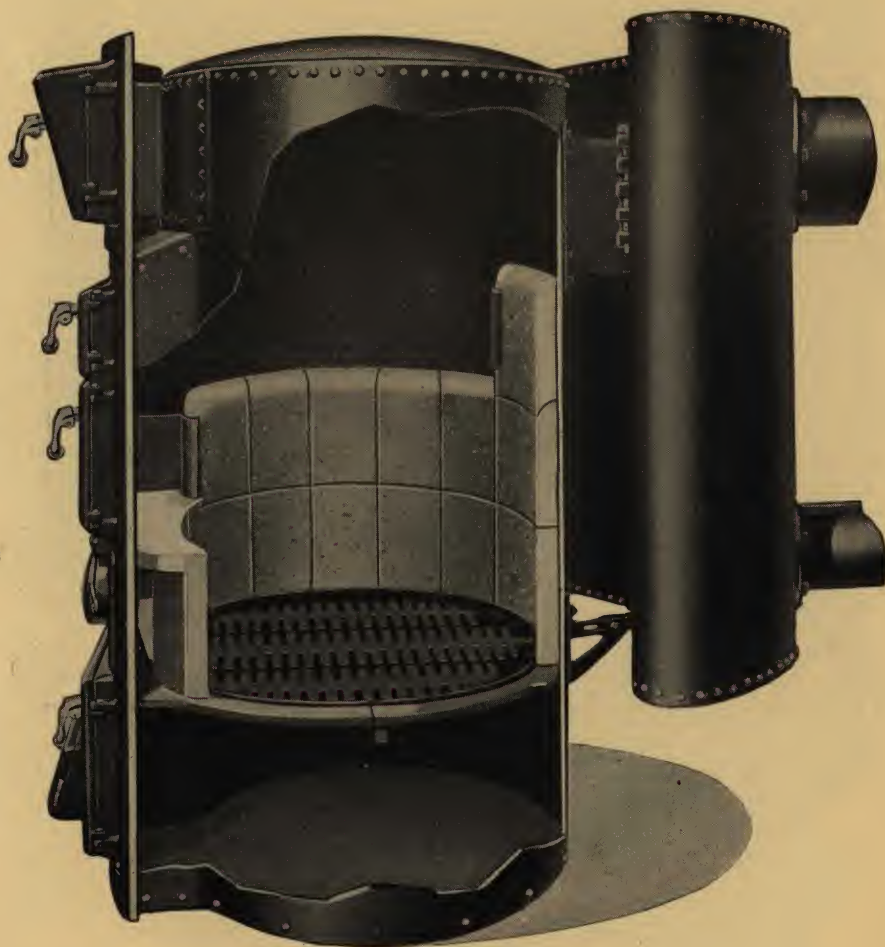
STANDARD SERVICE HEATER

On the following page you will see an inside view of our standard Service Heater.

As in all of our other heaters, excepting the Wood Burner, you will notice the locomotive type grate bars which may be installed without the use of any bolts or rivets and can be quickly assembled without the use of any tool whatsoever. This type of grate bar has become the standard for locomotive boilers, where high efficiency and durability are the main factors.

The grate bars are connected together on the under side with a metal bar with pins inserted, so that by shaking the center grate, the side grates will have the same action. The action of these grate bars reduces to a minimum the probability of clinkers, but if there should be an accumulation, it is a very easy matter to crush them with this type of grate. The fire pot is constructed of a very high grade of cupola fire brick of our own design and found in no other heater. The fire brick were designed particularly to function at all times in conjunction with the air blast just below the feed door. It is an accepted fact, that combustion takes place within about one foot of the top of the fire and proper combustion can be secured only by the moisture of highly tempered oxygen equally distributed at that point. It is also a known fact that gases will not mix unless they reach the same temperature. We have demonstrated by tests that oxygen taken into the fire box through the appliances on our heaters, make possible that mixture of the gases, and by so doing practically all of the heat units in the fuel will be utilized. If efficiency is to be attained, it is necessary that the combustion chamber be in proper ratio to the grate area for the distribution of heat units on each square foot of prime heating surface. With this in mind, we have so constructed our heaters to insure these qualities, and by so doing, we have eliminated the probability of overheating the body at any one particular place. Our heaters, operating in this manner, are a guarantee against the transmission of parched air through the warm air pipes. Directly in the rear of the fire pot under the radiator collar, we install two large fire brick known as the third row. We believe that this is the only heater on the market having this additional feature, and in the event it is necessary to maintain long firing periods, it is possible to carry a greater charge of fuel.

EXTRAVAGANT PROMISES NEVER



Cut away view of
STANDARD SERVICE HEATER

PHENOMENAL SERVICE ALWAYS



Side View of Our
HEAVY DUTY SERVICE HEATER

We show above a side view of our Heavy Duty Service Heater, which is built upon the same general lines as our Service Heater. This heater is made in three larger sizes with twin oval radiators connected in the rear of the heater. These radiators add materially to the heating capacity by supplying additional prime heating surface, and although they are not arranged to promote direct draft as in our regular Service Heaters, the large oval radiators are so constructed that they will carry the full volume of the smoke down to the smoke pipe attached at bottom of the radiators.

EXTRAVAGANT PROMISES NEVER



Front view of our
HEAVY DUTY SERVICE HEATER

Heavy Duty Service Heaters contain all of the exclusive features of our other heaters. They supply every requirement between our Service Heaters and our Power Plus.

PHENOMENAL SERVICE ALWAYS

Health Heat

THE POWER PLUS

Our Power Plus Heaters have become favorably known all over the country for the wonderful work they are doing in Churches, School Houses and other large public buildings where the State laws are very rigid in regard to the re-circulation of fresh and humidified air. They give absolute satisfaction in all large buildings where a warm air heating plant is at all feasible.

The body of the Power Plus is constructed of one-quarter inch steel, while the head is five-sixteenths inch material. These heaters are equipped with the large twin radiators as used on our Heavy Duty Service Heaters. The prime heating surface of our Power Plus Heaters ranges from one hundred to one hundred and twenty square feet, which is more square feet of radiation per square foot of grate area than in any other heater manufactured. The front has the same features as our Service Heater and Heavy Duty Service Heater, except that the lower feed door is equipped with a large four tube tuyere and with the twin discs. It has more than seven feet of grate surface made up of eight very heavy grate bars of the locomotive type, operating in series of four. You will notice on the front, the two mechanisms, one on each side of the heater directly below the lower feed door. On the left side, this mechanism operates the front four grate bars; on the right, it operates the rear series. This makes it possible to clean either the front or back of the fire without interfering with the operation of the heater. In moderate weather, you can carry the fire either on the front or back series of grates. These heaters are lined with cupola fire brick of the best quality obtainable. The ideal installation of this heater is where the fan system is employed. Such an installation produces wonderful economy in the operation and the Power Plus is daily receiving the highest praise from everyone who has used them.

We give special engineering service in connection with all Power Plus heaters and gladly submit plans whenever required. This heater is constructed in an oblong shape for the purpose of increasing the prime heating surface which makes it very adaptable for fan installations. Similar to our Service Heaters and our Heavy Duty Heaters, the front is equipped with the humidifier, but in fan system installations, we have additional attachments to promote additional humidity.

The Power Plus has been installed in batteries as high as six units with fans delivering up to 100,000 cubic feet of humidified air per minute to secure proper circulation of air. There is no other heater which will give as long and as dependable service as the Power Plus.

EXTRAVAGANT PROMISES NEVER



THE POWER PLUS

Exterior View

Ideal for stores, schools, churches and other large public buildings

PHENOMENAL SERVICE ALWAYS

Health Heat



THE POWER PLUS

Interior View

We show above a cut-away view of our Power Plus Heater showing the strong locomotive type grate bars and the mechanism which operates them. This gives an excellent view of the position of the twin radiators, the cupola brick lined fire pot and the large ash pit. Particular attention is called to the fact that in the rear of the fire box, the second row of the fire brick extend up to the radiator connection collars which will eliminate all possibility of damage to the heater while a heavy fire is being maintained.

There is no other heater on the market which nearly approaches the capacity, durability and efficiency of the Power Plus.

EXTRAVAGANT PROMISES NEVER



THE WOOD BURNER

Years ago the demand for Wood Burner Heaters was such that it became necessary for us to design and perfect a special heater of this type which we could give a place with our products.

In the construction of this heater, we use the same high-class material used in our other lines. The large horizontal tubes directly over the body promote additional fire travel which insures very high efficiency. This heater is made in two sizes and will take wood up to fifty-two inches in length. The casing may be either metal or brick, the same as all of our other heaters.

It is a positive, dependable heating unit and is worthy of consideration if your requirements demand a heater of this type. It is very practical in rural communities where there is a large supply of wood fuel and is particularly adaptable to dry kilns where waste lumber and blocks may be used for the fuel.

PHENOMENAL SERVICE ALWAYS

Health Heat



LIFE SAVER PIPELESS HEATER

Showing Detail of Casing

On pages fourteen and fifteen we show our Life Saver Pipeless Heater. The same painstaking care is observed in the construction of this heater as in all of our other heaters. The Life Saver Pipeless Heater is not equipped with radiators, but in its place, we have made projections for the installation of a combination check draft and damper that will retard the gases sufficiently for proper combustion. The installation of this heater is very satisfactory, where the house is so constructed that it is possible to use a pipeless installation. The tuyere, grate bars and cupola brick fire pot are the same as in our standard heaters. There is a five inch cold air chamber between the inner and outer casings and the inner casing is equipped with an additional lining, having a one inch air space which eliminates the heating of the inner casing. This promotes a natural flow of the air current. The general construction of this heater is of the highest type of its kind on the market. We can freely recommend this heater where it is desired to install a pipeless system.

EXTRAVAGANT PROMISES NEVER



"LIFE SAVER" PIPELESS HEATER WITHOUT CASING

PHENOMENAL SERVICE ALWAYS

Health Heat

THE FIRE POT

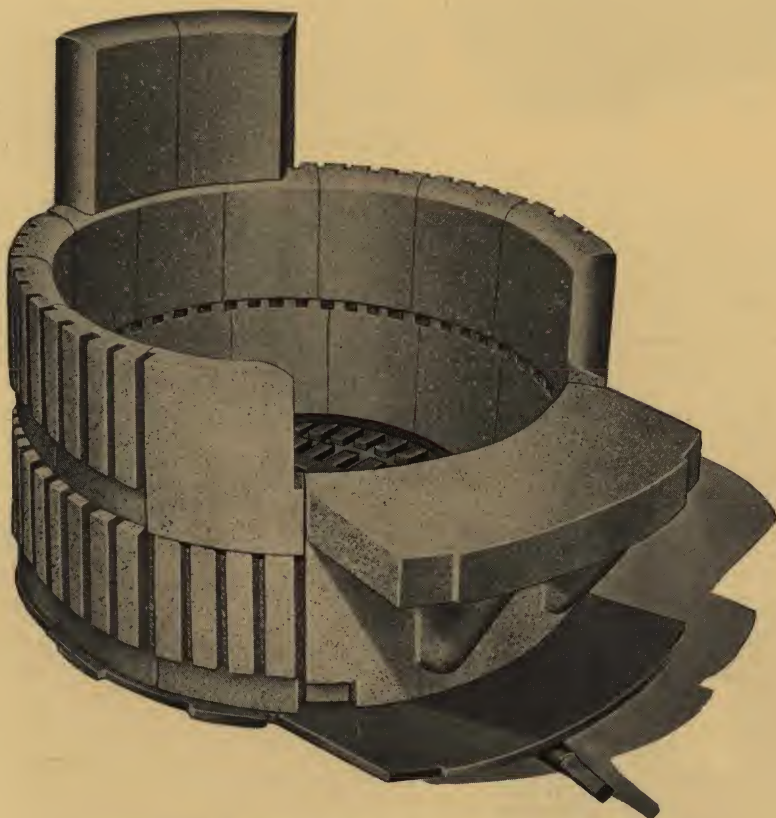
On the following page, we illustrate a full set of our fire pot cupola brick. For several years we have been experimenting and testing specially constructed brick to use in our fire pots which would eliminate the passive efficiency and unequal contraction of the fire pot lining.

Our Heating Engineers, after a great deal of study and experimental work, have designed what is known as the front tile liner. These are made up of practically the same material as are the other fire brick. Owing to the location of this front tile liner and the variation of temperature when the feed door is open or the air blast is used, it was necessary to use a slightly different mixture and also to burn the brick just the proper hardness. We have conferred with the manufacturers of our front tile liners in this connection and they are so convinced that we have a durable brick that they are willing on their part to guarantee to us that the brick will not crack, and we in turn guarantee our dealers that all front tile liners which may crack from the action of the heat, will be replaced free of charge, F. O. B. Factory.

It has been one of the greatest forward movements in the Warm Air Heating Industry to develop our fire pot liners which, you will notice from the illustration, are grooved and slotted, so that oxygen properly tempered is delivered equally over the fire pot, so that real economy in fuel consumption is maintained. In designing these tile liners, we have not overlooked the fact that in order to secure radiation down to the grate level, there must be direct contact between the fire brick and the furnace body. We have allowed just enough air space to furnish the necessary oxygen and still maintain the point of contact so very essential to the efficiency of the entire furnace body. The slots are placed in the lower fire brick as well as the second row, so that when a low fire is maintained, the oxygen is allowed to enter at the proper point.

EXTRAVAGANT PROMISES NEVER

Health Heat



CUPOLA BRICK FIRE POT LINERS

Showing detail of construction and installation

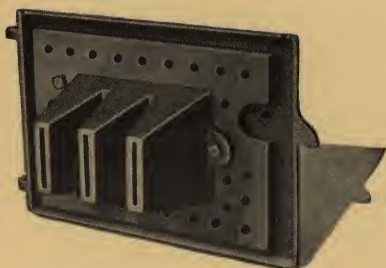
PHENOMENAL SERVICE ALWAYS

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THE TUYERE

This cut illustrates the three tube tuyere attached to the lower feed door of all of our Service Heaters.

The tubes project into the fire pot approximately five and one-half inches. When the air is taken through these tubes, it becomes heated before entering the combustion chamber and readily mixes with the other gases. When the disc on the outside of the lower feed door is left partly open, it will be noticed that the smoke from the chimney is of a blue-grey color instead of black and the soot deposit, if any, is of a sand color instead of a long black stringy nature that should have been utilized in the radiation of heat before leaving the combustion chamber.



OVER-LAP DOOR CAP

We show here a detail in the construction of the furnace body and call your attention particularly to the over-lapping door cap which is riveted to the body plate. Our patterns are so accurate that it is unnecessary to use asbestos, cement or gaskets to secure a gas-tight connection at this point. Anyone who has ever examined a heater of this type, will readily realize the importance of this feature. This construction prevents gas and smoke from the combustion chamber escaping into the warm air chamber and being carried to the living rooms, where it would be a detriment to health as well as discoloring interior decorations.



CUP-JOINT RADIATOR CONNECTION COLLAR

This cut shows our new body collar and we call attention particularly to the cup joint construction which is practically as secure and snug as a threaded connection. This union is something that manufacturers have endeavored to perfect for many years and is a feature found only in heaters manufactured by us. You will also notice the large heavy flange on the body collar which is fastened inside of combustion chamber. The heads of the bolts by which this body collar is attached, are countersunk in the flange which will eliminate any possibility of their being damaged. The installation of the body collar in this manner acts as a reinforcement and prevents any leaky joint at this point.



EXTRAVAGANT PROMISES NEVER

Health Heat

CASINGS

On the following two pages, we show our Standard Service Heater and Low Series Heater with casing. The individual pocket slips on each side of the heater make it unnecessary to take any punches or tools to make the holes in the casing to assemble these pocket slips, as they are put in proper place before leaving our factory. With the draw lugs, the installer can take a variation of three inches in the circumference of this casing and still have a perfect job.

One of the illustrations shows the standard heater with moisture pan directly above the feed door and the other illustration shows one of our Low Series with a six inch front extension panel in place of this water pan. Our tests have proven to us that the placing of the humidifier or water pan in any other position than as shown on our standard heater, makes it necessary to add additional water pans, so that sufficient humidity may be at all all times maintained in the living rooms. Our Low Series are adapted to shallow basements, but realizing the absolute necessity for proper moisture, we have added an additional water pan, one placed on each side of the heater. You will notice directly over the upper right hand corner of the front, that there is a rod projecting out a few inches. This rod is connected with the damper in the radiator, and by pulling this rod out, you can get a direct draft which is never required except when building a fresh fire. As soon as the fire begins to burn, the rod should be pushed in to close the damper in order to give indirect draft and utilize all the heat units in the fuel as well as to obtain additional prime heating surface from the radiator. The casing rings shipped with all of our Service Heaters, are made up of nineteen gauge iron having a special bead and pressed ends of our own design. The base rings are made of one inch angle iron which is very rigid and durable and eliminates any breakage in shipping or installing.

PHENOMENAL SERVICE ALWAYS

Health Heat



E-22 STANDARD SERVICE HEATER WITH CASING
EXTRAVAGANT PROMISES NEVER

Health Heat



I-20 LOW SERIES SERVICE HEATER WITH CASING
PHENOMENAL SERVICE ALWAYS

Specifications for Life Saver Pipeless Heaters

Number of furnace	Maximum heating capacity for residence in cubic feet	Diameter of combustion chamber, inches	Diameter of grate, inches	Area of grate, square inches	Size of smoke collar, inches	Height of furnace, inches	Diameter of outer casing, inches	Diameter of inner casing, inches	Size of duplex floor face, inches	Diameter of warm air pipe, inches
A-24	13,000	24	20	314	9	54	50	40	30x30	22
B-29	18,000	29	25	491	9	54	54	44	30x36	24

Specifications for Service Heaters

Number of furnace	Max. heating cap. in cubic ft. when divided into several rooms (see notes)	Maximum heating capacity for pipes, square inches	Diameter of combustion chamber, inches	Height of furnace, inches	Diameter of grate, inches	Area of grate, square inches	Size of smoke collar, inches	Height of indirect radiator, inches	Diameter of casing, inches	Height of casing complete, inches	Width of upper casing, inches	Width of lower casing, inches
STANDARD HEIGHT BODIES												
C-15	10,000	400	22	54	18	254	9	42	42	70	24	30
D-20	15,000	515	24	54	20	314	9	42	46	70	24	30
E-22	20,000	629	27	54	23	415	9	42	50	70	24	30
F-26	26,000	743	29	54	25	491	9	42	53	70	24	30
G-29	32,000	859	32	54	28	616	9	42	56	70	24	30
H-32	40,000	1,028	36	60	32	804	9	48	60	78	30	30

LOW BODIES

I-20	13,000	490	24	48	20	314	9	36	46	64	18	30
J-22	18,000	579	27	48	23	415	9	36	50	64	18	30
K-26	24,000	695	29	48	25	491	9	36	53	64	18	30
L-29	30,000	830	32	48	28	616	9	36	56	64	18	30
M-32	38,000	982	36	54	32	804	9	42	60	72	24	30

HEAVY DUTY STEEL FURNACES

N-36	45,000	1,122	32	60	28	616	12	2-46 Oval	64	78	30	30
O-37	60,000	1,309	36	60	32	804	12	2-46 Oval	66	78	30	30
P-38	75,000	1,521	36	72	32	804	12	2-52 Oval	66	90	36	36

Specifications for Service Pipeless Heaters

Number of furnace	Maximum heating ca- pacity for residences, in cubic feet	Height of furnace body over all, inches	Diameter of outer cas- ing, inches	Diameter of inner cas- ing, inches	Size of du- plex door face, inches	Diameter of warm air pipe, inches
Q-15.....	10,000	54	52	42	30x30	22
R-20.....	15,000	54	56	46	30x36	24
S-22.....	20,000	54	60	50	36x36	28
T-26.....	26,000	54	63	53	40x40	30
U-29.....	32,000	54	66	56	44x48	36

Specifications for Power-Plus Heaters

Number of furnace	Max. heat- ing cap. in several divided into rooms (see notes)	Maximum heating ca- pacity for pipes, square inches	Dimensions horseshoe shaped body, inches	Height of furnace, inches	Size of grate, inches	Grate area, square inches	Size of smoke pipe, inches	Height of indirect radiator, inches	Diameter of casing, inches	Height of casing com- plete, inches	Width of upper cas- ing, inches	Width of lower cas- ing, inches
154	122,500	2,110	32x48	54	28x44	1,025	12	2-40 Oval	78	72	24	30
160	138,850	2,360	32x48	60	28x44	1,025	12	2-46 Oval	80	78	30	30
172	162,150	2,620	32x48	72	28x44	1,025	12	2-52 Oval	82	96	36	36

Specifications for Success Wood Burners

Number of furnace	Maximum heating ca- pacity per cubic feet	Maximum heating ca- pacity for pipes, square inches	Length of wood	Size of smoke con- nection	Length of casing, inches	Width of casing, inches	Height of casing com- plete, inches	Days re- quired to ship
36.....	18,000	540	36 inches	8 inches	43	42	72 inches	10
52.....	25,000	725	52 inches	8 inches	61	42	72 inches	10

ENGINEERING NOTES. For maximum heating capacities for sizes up to and including M-32, for buildings with all four sides exposed, such as schools, churches, or store buildings, when only one or two rooms, add 25 per cent to the ratings. For buildings with only the front and back exposed add 30 per cent.
Unless otherwise ordered all hoods from 42-inch to 56-inch will be for 14-inch pipe, and from 60-inch to 80-inch for 16-inch pipe, with pitched sides.

Note that the Furnaces are built in 48, 54, 60 and 72-inch bodies, for shallow, medium height, and deep basements. Do not use a high furnace in a shallow basement, but use the next larger furnace, built with a lower furnace body.

ENGINEERING NOTES. No. 154, No. 160 and No. 172 are used in churches, school houses and in any large building where the gravity warm air heater has been too small in the past. This style heater is adapted for fan system. The heating capacity can be increased 30 per cent by using a multiblade or propeller fan.

Consult our Engineering Department as to your requirements for plans and specifications on special installations.

Health Heat

POINTS TO REMEMBER

Success Heaters are constructed of heavy rust resisting steel, riveted and caulked forever tight.

Success Heaters have specially designed fire brick, which insure prime heating surface down to the grate level.

Success Heaters have specially designed tuyeres, which allow pre-heated oxygen to enter the combustion chamber at just the proper height above the fire, to utilize practically all of the fuels.

Success Heaters are equipped with enclosed and removable moisture pans.

Success Heaters have strong locomotive type self-cleaning grates.

Success Heaters *DO NOT* have any leaky joints.

Success Heaters are guaranteed to be free from mechanical defects.

Then, when you are ready to install Warm Air Heating Systems,

Specify Success Heaters



Make your home
Complete with
a Success Rentier